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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,840	02/01/2007	Pere Joan Cardona Iglesias	TJA-139US	9930

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RATNERPRESTIA
P.O. BOX 980
VALLEY FORGE, PA 19482

EXAMINER	
LI, QIAN JANICE	
ART UNIT	PAPER NUMBER
1633	
MAIL DATE	DELIVERY MODE
12/15/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/577,840	CARDONA IGLESIAS ET AL.	
	Examiner	Art Unit	
	Q. JANICE LI	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-19,21-27,35-37 and 44-60* is/are pending in the application.

4a) Of the above claim(s) *13-19,21-27,35-37 and 44-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *47-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The examiner assigned to examine the application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to examiner Q. Janice Li, at Group Art Unit 1633.

Unless otherwise indicated, previous rejections that have been rendered moot in view of the amendment to pending claims and new grounds of rejections will not be reiterated.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 47-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims are vague and indefinite because of the claim (47) recitation "further treating the cell wall fragments to inactivate any remaining virulent cells". It is unclear what step(s) "treating the cell wall fragment" embraces or excludes, and hence the metes and bounds of the claims are uncertain.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 47-49, 51-55 rejected under 35 U.S.C. 103(a) as obvious over *Kumazawa et al*. (Japan J Microbiol 1976;20:183-190) in view of *Ragland* (USP 4,744,984).

Kumazawa teaches a pharmaceutical composition comprising cell wall fragments from virulent *Mycobacterium tuberculosis* strain Aoyama B (see e.g. the abstract). *Kumazawa* teaches culturing the MTB-C for 8 weeks, which were then killed by heating, thoroughly washed, delipidated with acetone and chloroformmethanol, hydrogenolyzed in ethanol containing 20% acetone, which homogenized the bacterial cells and then the water-soluble extracts were lyophilized and gel-filtrated with Sephadex G-100 column (see e.g. column 1, page 184). When used as an adjuvant, *Kumazawa* teaches the MTB-C fraction was dissolved in saline (neutral pH). Although not mentioned, PBS buffer was the most commonly used alternative to saline.

The teaching of *Kumazawa* differs from instant claims only in that the non-ionic surfactant was absent from the homogenizing process.

Ragland supplemented *Kumazawa* by establishing it was well known in the art to prepare mycobacteria wall extract using nonionic surfactant such as

triton X-100 (an octylphenol ethoxylate compound). *Ragland* teaches a process for preparing a modified mycobacteria cell wall composition as a pharmaceutical agent (e.g. the abstract), wherein the process comprises culturing the bacteria for 10-20 days, disrupting the bacterial cells by either pressure or sonic energy, which released soluble cell components from the bacterial cells, collecting disrupted cell walls by washing, centrifugation and re-suspending cell wall fragments in distilled water. The cell wall fraction is then washed and separated from any unbroken cells (e.g. columns 4-5). *Ragland* went on to teach optionally the cell wall fraction was further treated with detergent such as Triton X-100 and lyophilized (column 5, lines 22-41). Although *Ragland* does not specifically teach the reasoning for using detergent treatment, it was well known in the art that detergent serves as an alternative or additional measure for physical disruption of bacterial cell wall.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the composition as taught by *Kumazawa* by including the optional Triton X-100 detergent treatment as taught by *Ragland* with a reasonable expectation of success. Thus, the claimed invention as a whole was *prima facie* obvious in the absence of evidence to the contrary.

Claim 50 is rejected under 35 U.S.C. 103(a) as obvious over *Kumazawa et al.* (Japan J Microbiol 1976;20:183-190) in view of *Ragland* (USP 4,744,984)

as applied to claims 47-49, 51-55 above, further in view of *Mohr et al.* (USP 7,214,651).

The combined teaching of *Kumazawa* in view of *Ragland* does not mention the ethylene oxide (EO) content of the ethoxylates.

Mohr supplemented *Kumazawa* in view of *Ragland*. *Mohr* teaches that ethoxylates having 5-7 or more than 7 EO units are effective disinfectant for disinfection against mycobacterium (e.g. claims 1 and 14).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the composition as taught by *Kumazawa* in view of *Ragland* by using the 7-8 mol EO triton X-100 surfactant with a reasonable expectation of success for disinfection of mycobacterial cell walls. Thus, the claimed invention as a whole was *prima facie* obvious in the absence of evidence to the contrary.

Claims 47-49, 51-55 are rejected under 35 U.S.C. 103(a) as obvious over *Kumazawa et al.* (Japan J Microbiol 1976;20:183-190) in view of *Ragland* (USP 4,744,984) and further in view of *Lyons et al.* (Infect Immunity 2002; 70:5471-8).

Kumazawa in view of *Ragland* do not specifically teach the elected virulent strain H37Rv.

Lyons supplemented the combined teaching by establishing it was well known in the art the cell wall extract of *Mycobacteria* strain H37Rv had been used as a vaccine composition for treating *Mycobacterium tuberculosis* infection (see e.g. column 1, page 5472 and figure 4).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use either the *Mycobacterium tuberculosis* strain Aoyama B as taught by *Kumazawa* or strain H37Rv as taught by *Lyons* with a reasonable expectation of success. Given the knowledge of the skilled, the limitation falls within bounds of optimization. Thus, the claimed invention as a whole was *prima facie* obvious in the absence of evidence to the contrary.

Claim 56 is rejected under 35 U.S.C. 103(a) as obvious over *Kumazawa et al*. (Japan J Microbiol 1976;20:183-190) in view of *Ragland* (USP 4,744,984) as applied to claims 47-49, 51-55 above, and further in view of *Dhiman et al*. (Indian J Exp Biol 1999; 37:1157-66).

Kumazawa in view of *Ragland* do not specifically teach to include liposome in the composition.

Dhiman supplemented the combined teaching by establishing it was well known in the art that liposome may be present in the mycobacteria cell wall composition as an adjuvant (e.g. see table 4).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include liposome in the composition of mycobacterial cell wall extracts with a reasonable expectation of success. Given the knowledge of the skilled, the limitation falls within bounds of optimization. Thus, the claimed invention as a whole was *prima facie* obvious in the absence of evidence to the contrary.

Claims 57-60 are rejected under 35 U.S.C. 103(a) as obvious over *Kumazawa et al*. (Japan J Microbiol 1976;20:183-190) in view of *Ragland* (USP 4,744,984) and *Dhiman et al*. (Indian J Exp Biol 1999; 37:1157-66) as applied to claims 47-49, 51-56 above, and further in view of *Parikh* (USP 5,785,975).

The combined teachings *supra* did not specify the components of liposome, such as phospholipids and sterols or including Vitamin E in the vaccine composition.

Parikh supplemented the combined teaching by establishing it was known in the art liposome had many forms and components including sterols, phosphatidylcholine, and a bacteria vaccine composition may comprise phophatidylcholine liposome and vitamin E (e.g. claims 10-15, example II, and column 6).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include additional elements in the composition of mycobacterial cell wall extracts with a reasonable expectation of success, wherein the liposome may be phospholipids or sterols, wherein the formulation may comprise vitamin E. Given the knowledge of the skilled, the limitations fall within bounds of optimization. Thus, the claimed invention as a whole was *prima facie* obvious in the absence of evidence to the contrary.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Q. Janice Li** whose telephone number is **571-272-0730**. The examiner can normally be reached on 9:30 am - 7:30 p.m., Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Joseph Woitach** can be reached on **571-272-0739**. The **fax** numbers for the organization where this application or proceeding is assigned are **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

For all other customer support, please call the USPTO Call Center (UCC) at **800-786-9199**.

/Q. JANICE LI/
Primary Examiner, Art Unit 1633